

# **Retrieved Data Presentation (RDP)**

## **Requirements**

### **Thor Design Panel 3**

**Document No. 84K-01900-030**

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Version 1.1

# 1. Retrieved Data Presentation

## 1.1 Retrieved Data Presentation Introduction

### 1.1.1 Retrieved Data Presentation Overview

The Retrieved Data Presentation (RDP) establishes the framework for CLCS data retrieval. The retrievals are similar in functionality to those retrievals that resided on the PDR/SPA in CCMS. Figure 1 below shows the relationship of the programs in the Retrieved Data Presentation. As depicted in the figure, the programs are composed of two sets of programs executing in a client/server relationship. The “Client” programs may reside in either a Business and Support Information Service (BASIS) CLCS Support Workstation, or in an Office Workstation. The “Client” programs provide a Graphical User Interface (GUI) to the server on the SDC. The “Client” programs are written in Java and are executed under a Web Browser on the workstation.

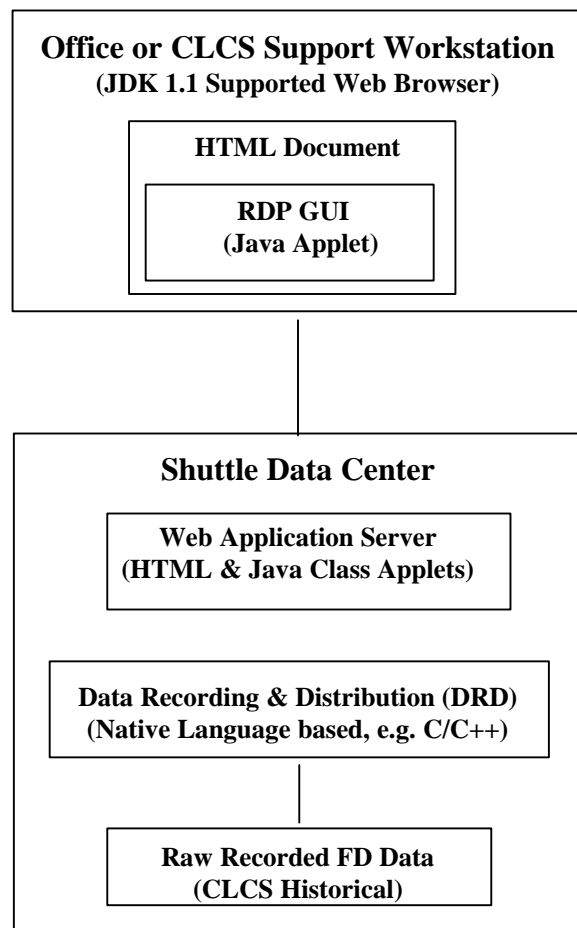


Figure 1 — Retrieved Data Presentation Context Diagram

### **1.1.2 Retrieved Data Presentation Operational Description**

The Java GUIs to be developed for Thor will provide user access to historical data from the SDC. The RDP will reside on a SDC Web server. Using a Web browser on an office desktop workstation, or the CLCS Support Workstation display in the Operational Control Room (OCR), the RDP would be executed. The application language will be Java, C, or C++.

## **1.2 Retrieved Data Presentation Specifications**

### **1.2.1 Retrieved Data Presentation Groundrules**

- The RDP print capability will be dependent on available and supported network printers.
- RDP does NOT support indexed SDC CLCS historical data for Thor.
- RDP does support raw (preferred) SDC CLCS historical data for Thor.
- CLCS data retrievals will be dependent on the CLCS Record and Retrieval Phase I Thread capability.
- RDP utilizes QUEUE time to define start and stop time on all four retrievals.

### **1.2.2 Retrieved Data Presentation Functional Requirements**

The Functional Requirements for Retrieved Data Presentation (RDP) are arranged in the following functions:

1. Supported Tool Sets
2. Supported Environments
3. Supported Data Interfaces
4. Main Menu
5. Raw Packet Retrieval
6. Computer-to-Computer (C-C) Retrieval
7. Log Data Retrieval
8. Function Designator (FD) Retrieval
9. Display

#### **1 Supported Tool Sets**

- 1.1 RDP shall be developed using the Java Development Kit (JDK) 1.1 or higher.
- 1.2 RDP shall be executed using a JDK 1.1 supported web browsers which (e.g. Netscape Navigator 4.0 or better or Microsoft's Internet Explorer 4.0 or better).

#### **2 Supported Environments**

- 1.1 *RDP shall execute on the CLCS Command and Control Workstation.*
- 1.2 RDP shall execute on the CLCS Support Workstation.
- 1.3 RDP shall execute on the Office Workstation.

#### **3 Supported Data Interfaces**

- 1.1 RDP shall use CLCS historical data on the SDC in raw format as described in Table 1 below.

	CDS CCMS Historical	SDC CCMS Historical	SDC CLCS Historical	SDS CCMS Real-time	SDS' CCMS et al Real- time	SCAN Server CCMS Real-time	SDS CLCS Real-time
Packet			✓				
C-C			✓				
Log Data			✓				
FD			✓				
Packet - Raw Packet Retrieval C-C - Computer-to-Computer Retrieval Log Data - Log Data Retrieval FD - Function Designator Retrieval							

**Table 1 — Retrieved Data Presentation Data Sources (Support for Thor)**

#### **4 Main Menu**

- 1.1 RDP Main Menu shall provide the ability to select Raw Packet, C-C, Log Data, and FD Retrievals.
- 1.2 RDP menus shall provide capability to clear text fields.
- 1.3 RDP menus shall provide help text to configure browser to run a Java Applet.

#### **5 Raw Packet Retrieval**

- 1.1 RDP shall accept TCID as input *or default to current TCID if in OCR*
- 1.2 RDP shall accept test set identifier as input for Thor.
- 1.3 RDP shall accept start time as input *or default to 'now - 6' minutes*.
- 1.4 RDP shall accept stop time as input *or default to 'now'*.
- 1.5 RDP shall accept packet type as input with a default to all and an option to restrict using a hex (00 to FF) input.
- 1.6 RDP shall accept source as input with a default to all and an option to restrict using a logical source name.
- 1.7 RDP shall accept destination as input with a default to all and an option to restrict using logical source names.
- 1.8 RDP shall provide the capability for an EXECUTE button, which will send retrieval requests to Data Recording and Distribution (DRD).
- 1.9 RDP shall provide the capability to receive the output of the retrieval requests from DRD.
- 1.10 RDP shall provide the capability to format and present the data to the user.
- 1.11 RDP shall decode and output CDT time in CDT format and QUEUE time in UTC format.
- 1.12 RDP shall decode and output packet type.
- 1.13 RDP shall output data in raw hex/ASCII format.
- 1.14 RDP shall output data for display to the screen.
- 1.15 RDP shall have the capability to output data to the printer.
- 1.16 RDP shall capture errors generated and display them to the screen.

#### **6 Computer-to-Computer (C-C) Retrieval**

- 1.1 RDP shall accept TCID as input *or default to current TCID if in OCR*.
- 1.2 RDP shall accept test set identifier as input for Thor.
- 1.3 RDP shall accept start time as input *or default to 'now - 6' minutes*.
- 1.4 RDP shall accept stop time as input *or default to 'now'*.
- 1.5 RDP shall accept as input with a default to all and an option to restrict using a source-destination input pair.
- 1.6 RDP shall provide the capability for an EXECUTE button, which will send retrieval requests to Data Recording and Distribution (DRD).
- 1.7 RDP shall provide the capability to receive the output of the retrieval requests from DRD.
- 1.8 RDP shall provide the capability to format and present the data to the user.
- 1.9 RDP shall decode and output CDT time in CDT format and QUEUE time in UTC format.
- 1.10 RDP shall output data in raw hex/ASCII format.
- 1.11 RDP shall output C-C data types.
- 1.12 RDP shall output C-C responses.
- 1.13 RDP shall output system event codes (with description) for Thor.
- 1.14 RDP shall output a text decode of the routing codes for Thor.
- 1.15 RDP shall output data for display to the screen.
- 1.16 RDP shall have the capability to output data to the printer.
- 1.17 RDP shall capture errors generated and display them to the screen.

## 7 Log Data Retrieval

- 1.1 RDP shall accept TCID as input *or default to current TCID if in OCR*.
- 1.2 RDP shall accept test set identifier as input for Thor.
- 1.3 RDP shall accept start time as input *or default to 'now - 6' minutes*.
- 1.4 RDP shall accept stop time as input *or default to 'now'*.
- 1.5 RDP shall accept source as input with a default to all and an option to restrict using a logical source name.
- 1.6 RDP shall accept Log Data ID as input with a default to all and an option to restrict using a logical name.
- 1.7 RDP shall provide the capability for an EXECUTE button, which will send retrieval requests to Data Recording and Distribution (DRD).
- 1.8 RDP shall provide the capability to receive the output of the retrieval requests from DRD.
- 1.9 RDP shall provide the capability to format and present the data to the user.
- 1.10 RDP shall decode and output CDT time in CDT format and QUEUE time in UTC format.
- 1.11 RDP shall decode packet type as output.
- 1.12 RDP shall output data in raw hex/ASCII format.
- 1.13 RDP shall output data for display to the screen.
- 1.14 RDP shall have the capability to output data to the printer.
- 1.15 RDP shall capture errors generated and display them to the screen.

## 8 Function Designator (FD) Retrieval

- 1.1 RDP shall accept TCID as input *or default to current TCID if in OCR*.
- 1.2 RDP shall accept test set identifier as input for Thor.
- 1.3 RDP shall accept start time as input *or default to 'now - 6' minutes*.
- 1.4 RDP shall accept stop time as input *or default to 'now'*.
- 1.5 RDP shall accept FDs as input.

- 1.6 RDP shall provide the capability for an EXECUTE button, which will send retrieval requests to Data Recording and Distribution (DRD).
- 1.7 RDP shall provide the capability to receive the output of the retrieval requests from DRD.
- 1.8 RDP shall provide the capability to format and present the data to the user.
- 1.9 RDP shall decode and output CDT time in CDT format and QUEUE time in UTC format.
- 1.10 RDP shall output data in SPMACR Format.
- 1.11 RDP shall output basic health values of failure, warning or none (valid).
- 1.12 RDP shall output data for display to the screen.
- 1.13 RDP shall have the capability to output data to the printer.
- 1.14 RDP shall capture errors generated and display them to the screen.

## 9 Display

- 1.1 RDP shall provide the capability to display TCID as a header on every retrieval output product (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.2 RDP shall provide the capability to display SCID as a header on every retrieval output product (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.3 RDP shall provide the capability to display Start Time as a header on every retrieval output (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.4 RDP shall provide the capability to display Stop Time as a header on every retrieval output (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.5 RDP shall provide the capability to display Start Date as a header on every retrieval output (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.6 RDP shall provide the capability to display Stop Date as a header on every retrieval output (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.7 RDP shall provide the capability to display test set selection as a header on every retrieval output (header appears on every screen page, hard copy page, and top of each file). This is functionally equivalent to the current CCMS.
- 1.8 RDP shall provide the capability to display FD selection as a header on every retrieval output (header appears on every screen page, hard copy page, and top of each file) where FD's are involved. This is functionally equivalent to the current CCMS.
- 1.9 RDP shall provide the capability to display the user's input at the beginning of every retrieval output

### 1.2.2.1 Future RDP Requirements and Ideas

Future Requirements for Retrieved Data Presentation may include some of the following:

- 1. Input file (for any retrieval).
- 2. Reason codes: detailed health.
- 3. Scrollable list of types for Log Data Retrieval.
- 4. Output in health column.
- 5. FD's requested as a group.
- 6. FD' selectable by type and source.
- 7. Create a list of source-destination pairs.

8. Output data to a file.
9. Turn health reason codes ON or OFF.
10. Retrieval of CLCS SDC data in the indexed format.
11. Optional user input of a title line to identify test run.
12. Input a list of source and destination pairs.
13. Output the decode of log data.
14. The retrievals only use CLCS historical data on the SDC in raw format for Thor. In future releases, retrieval of data from additional data sources will be provided.
15. Save input requests to a file.
16. Enter the difference in Start/Stop times as a + or - change in seconds.
17. Provide some form of scrollable list of FDs for operator selection.
18. Display multiple test set with TCID.
19. Cross reference for enumerated FD types.

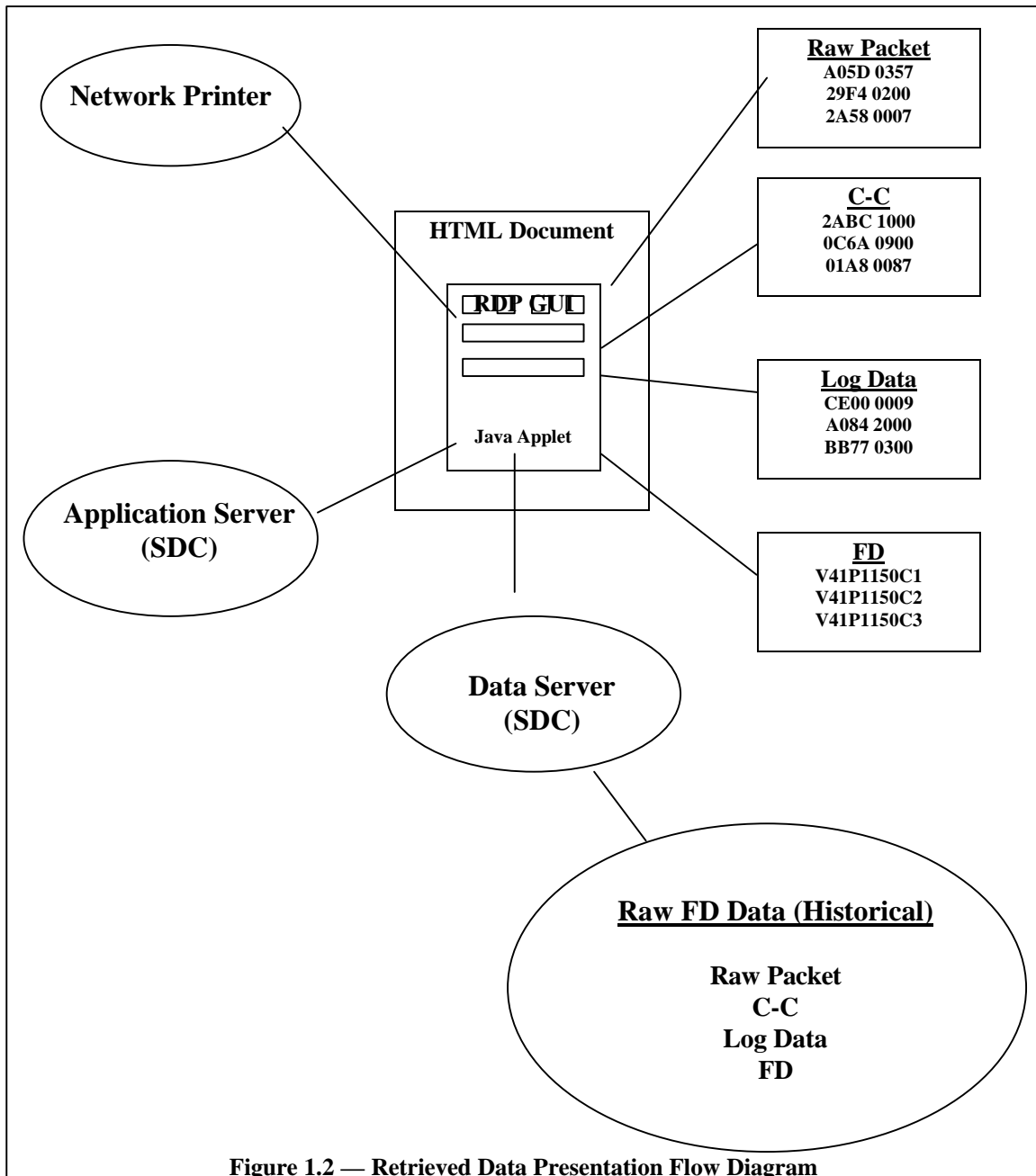
### **1.2.3 Retrieved Data Presentation Performance Requirements**

#### **1 Startup Time**

- 1.1 RDP shall begin displaying data within 5 seconds of receiving data from the SDC Data Server, under a standard system load.

### 1.2.4 Retrieved Data Presentation Flow Diagram

When executed via a Web browser the RDP is downloaded from the SDC application server to the browser. The browser then executes the RDP byte code and displays it on the Web page. The user interfaces with the RDP GUI by selecting options and requesting data. The user's request is sent to the Data Server on the SDC and results are returned to the Web browser.



### 1.3 Retrieved Data Presentation Design Specifications



The Retrieved Data Presentation (RDP) System provides a means for information retrieval from the CLCS historical data base. The RDP shall be implemented under a classic client/server architecture. The client workstation uses a standard COTS Web page Java Applet to provide a graphic user interface. The Applet contains a DRD Interface Module that provides the link for communicating with a Java Interface on the DRD server. Figure 1.3, below, shows the inter-communication relationship between software packages within the workstation and the server.

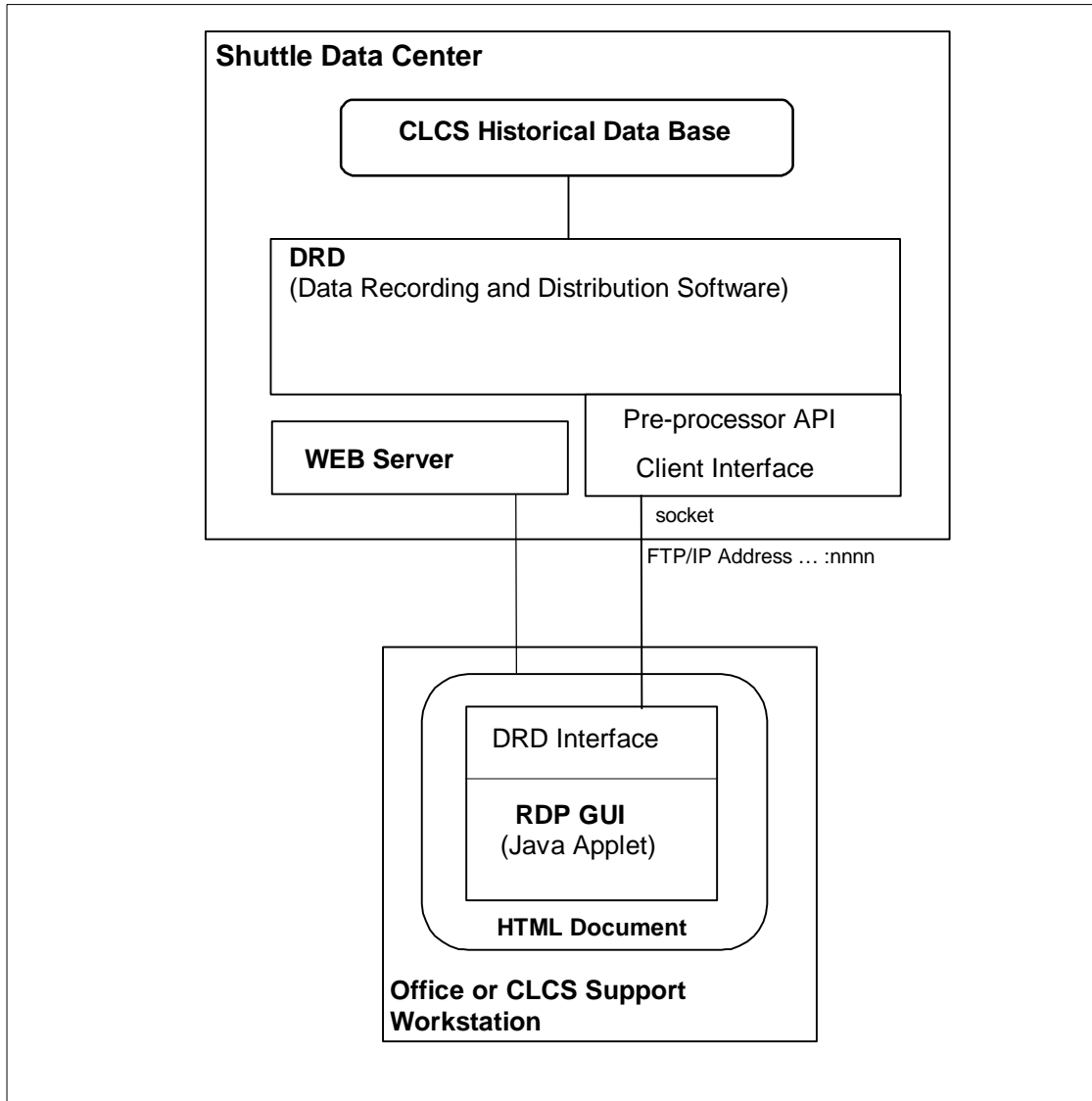


Figure 1.3 RDP Software Module Overview

### 1.3.1 RDP Detailed Data Flow

The data flow diagram below illustrates the sequence of flow between the client and server workstations in retrieving historical data. The sequence as follows:

- 1) User enters request parameters within the Java GUI, then depresses 'Execute'.
- 2) Execute causes the RDP Java program to establish a link between its RDP Client and the SDC Server.
- 3) The RDP Java program transmits the user request to the SDC Retrieval Pre-processor Interface.
- 4) Pre-processor sends request to Retriever which retrieves data from the Database.
- 5) Retrieved data is routed back through the Interface to the Java program.
- 6) Java program displays the data.
- 7) User invokes printout of data by print sequence selection.

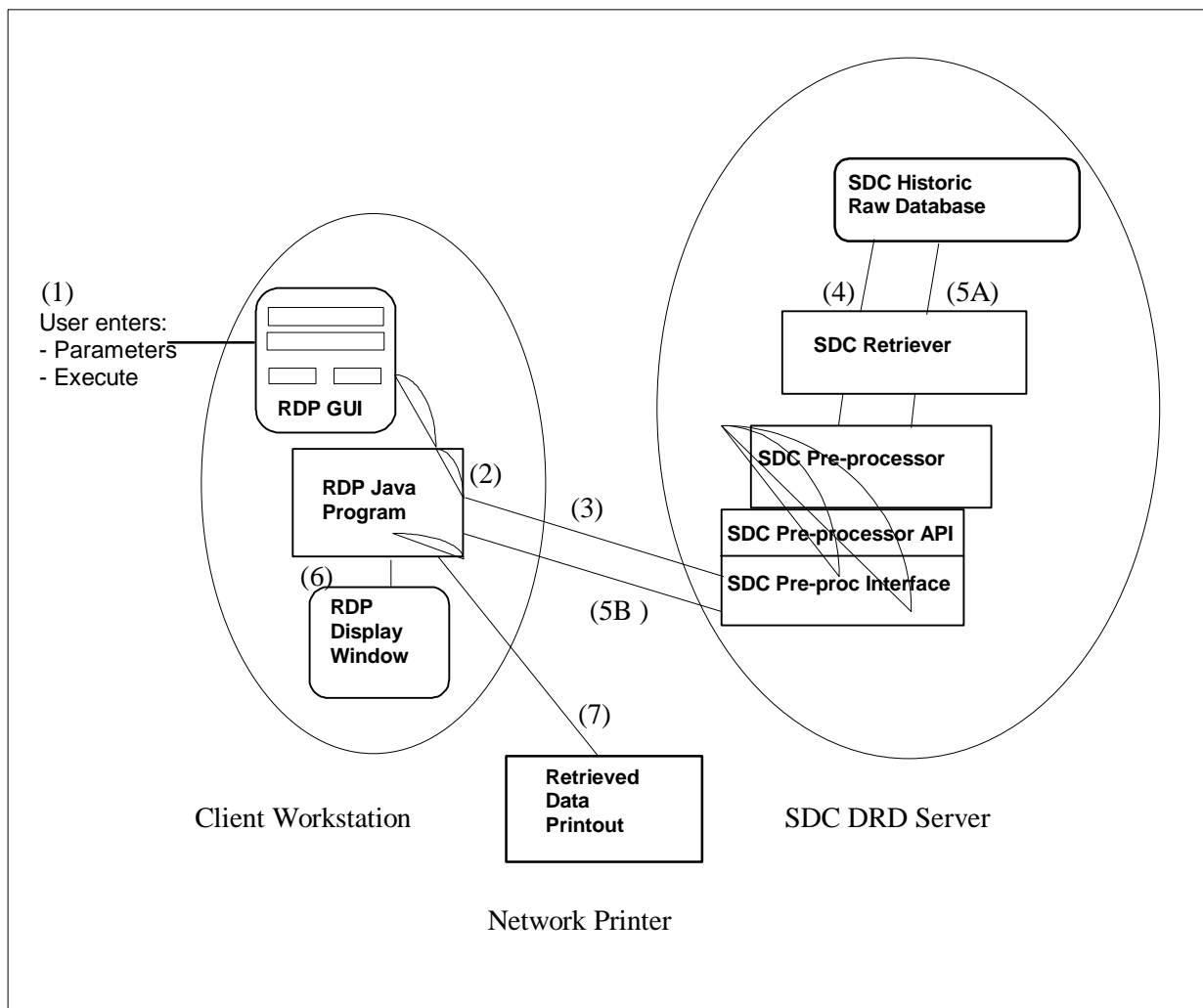


Figure 1.3.1 Retrieved Data Presentation, Detailed Data Flow Diagram

## 1.3.2 RDP External Interfaces

### 1.3.2.1 RDP Message Formats

RDP user messages originate from either of two sources: 1) The RDP Java Applet Client software, or 2) from the DRD Server.

#### *a) USER MESSAGES ORIGINATING AT THE JAVA CLIENT*

User messages from the Java Client software will be displayed in the Main Menu GUI window illustrated in Section 1.3.2.2.1.1. These messages are primarily informative and maintain an audit trail of activity. Messages are to be fully defined at development time; examples of their format are provided below.

**Message Number: 1**

Message Group: Client

**Date/Time Raw Packet Retrieval, Data Processing Started**

**Message Number: 2**

Message Group: Client

**Date/Time Raw Packet Retrieval Complete**

**Message Number: n**

Message Group: Client

#### *b) USER MESSAGES ORIGINATING AT THE DRD SERVER*

User messages from the DRD software will be displayed in the Retrieval display window illustrated in Section 1.3.2.2.2. These messages are informative and primarily indicate data retrieval status. Messages are to be fully defined at development time; examples of their format are provided below.

**Server Message: 1**

Message Group: Server

**Date/Time End of archive reached before request satisfied.**

**Server Message: 2**

Message Group: Server

**Date/Time End of archive reached, no data found.**

**Server Message: n**

Message Group: Server

*Similar type messages to be displayed for all significant events.*

### 1.3.2.2 RDP Graphic User Interface Display Formats

User interface formats include five (5) GUI control pages for user parameter input and four (4) display images for each of four types of retrieved data. The retrieved data display images can also be output to printers on the user's network.

#### 1.3.2.2.1 GRAPHIC USER INTERFACE CONTROL PAGES

##### 1.1 RDP Menu GUI

The RDP Menu control permits the user to further select one of the four retrieval type GUI control pages. The menu further provides a message window which displays user activity messages.

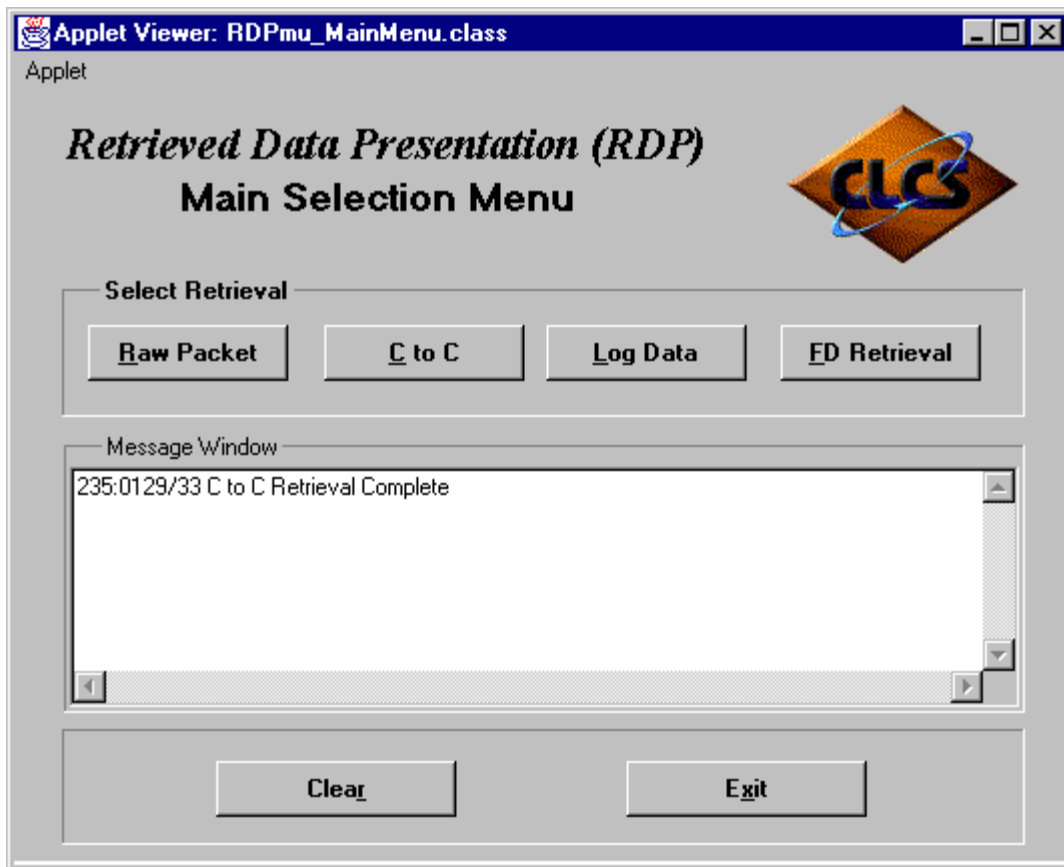


Figure 1.3.2.2.1.1 RDP Menu GUI

## 1.2 RDP Raw Packet Retrieval

This RDP GUI provides standard base parameter panel for Raw Packet Retrieval. Default values and filter options are defined in the Requirements of this specification.

Note that the Start and Stop times (and dates) may be entered in either the format displayed below (Time: hhmmss.sss, Date: mmddyy) or in the Julian format (Time: ddd:hhmm/ss.sss) with the Date field blank. This is true for all RDP retrievals on the following pages.

**Retrieved Data Presentation (RDP)**  
**Raw Packet Retrieval**

**Base Parameters**

TCID	RTPS Set	Start Time	Start Date	Stop Time	Stop Date
saa084a	TESTDATA	074428.100	081597	074530.100	081597

**Packet Parameters**

Packet Type	Source	Destination
42 (2 Hex)	CCPn (Name)	All (Name)

**Alterate Packet Type Selection**

	Source CPU on RTCN				Source CPU on DCN			
	GW	DDP	CCP	OPCM	DDP	CCP	HCI	OPCN
Change Data	<input type="radio"/> 02	<input type="radio"/> 22	<input checked="" type="radio"/> 42	<input type="radio"/>	<input type="radio"/> 82	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health Status	<input type="radio"/> 03	<input type="radio"/> 23	<input type="radio"/> 43	<input type="radio"/> 63	<input type="radio"/> 83	<input type="radio"/>	<input type="radio"/> C3	<input type="radio"/> E3
Log Data	<input type="radio"/> 04	<input type="radio"/> 24	<input type="radio"/> 44	<input type="radio"/> 64	<input type="radio"/> 84	<input type="radio"/> A4	<input type="radio"/> C4	<input type="radio"/> E4
System Event Code	<input type="radio"/> 05	<input type="radio"/> 25	<input type="radio"/> 45	<input type="radio"/> 65	<input type="radio"/> 85	<input type="radio"/> A5	<input type="radio"/> C5	<input type="radio"/> E5
C to C Messages	<input type="radio"/> 01	<input type="radio"/> 21	<input type="radio"/> 41	<input type="radio"/> 61	<input type="radio"/> 81	<input type="radio"/> A1	<input type="radio"/> C1	<input type="radio"/> E1
C to C Responses	<input type="radio"/> 00	<input type="radio"/> 20	<input type="radio"/> 40	<input type="radio"/> 60	<input type="radio"/> 80	<input type="radio"/> A0	<input type="radio"/> C0	<input type="radio"/> E0

**Execute** **Clear** **Help** **Exit**

Figure 1.3.2.2.1.2 RDP Raw Packet Retrieval GUI

### 1.3 Computer to Computer Retrieval

This RDP GUI provides standard base parameter panel for Computer to Computer Packet Retrieval. Default values and filter options are defined in the Requirements of this specification.

Applet Viewer: RDPcc\_ComputerComputer.class

Applet

## Retrieved Data Presentation (RDP) Computer to Computer

Base Parameters

TCID	RTPS Set	Start	Stop
saa084a	TESTDATA	Time: 074428.100	074530.100
		Date: 081597	081597

Source/Destination Named Pair

Source: (Name) GS1H --> ALL Destination (Name)

ALL  
GS1S  
GS2A  
GS2S

Execute Clear Help Exit

Figure 1.3.2.2.1.3 RDP Computer to Computer Retrieval GUI


## 1.4 Log Data Retrieval

This RDP GUI provides standard base parameter panel for Log Data Packet Retrieval. Default values and filter options are defined in the Requirements of this specification.

Applet Viewer: RDPId\_LogDataRetrieval.class

Applet

### Retrieved Data Presentation (RDP) Log Data Retrieval



Base Parameters

<b>TCID</b> saa084a	<b>RTPS Set</b> TESTDATA	<b>Start</b> Time: 074428.100 Date: 081597	<b>Stop</b> Time: 074530.100 Date: 081597
------------------------	-----------------------------	--	---

Log Data Source and ID

<b>Source:</b> (Name) ALL GS1A GS1S GS3H PCMA	<b>ID:</b> FN	FN LDB ECP Error Response Data FP LDB PCMMU/PDI DumpData R FR LDB Unsolicited Response Data FS TCS-S or TCS-1 Call Response D FT PCM Telemetry Error Frame FU ME Telemetry Error Frame FX GPC Main Memory/Mass Memor FY ME Telemetry Frame
---	---------------	---

Execute Clear Help Exit

Figure 1.3.2.2.1.4 RDP Log Data Retrieval GUI

## 1.5 Function Designator Retrieval

This RDP GUI provides standard base parameter panel for Function Data Packet Retrieval. Default values and filter options are defined in the Requirements of this specification.

Applet Viewer: RDPfd\_FunctionDesignatorRetrieval.class

Applet

### Retrieved Data Presentation (RDP) Function Designator Retrieval

Base Parameters

TCID	RTPS Set	Start	Stop
saa084a	TESTDATA	Time: 074428.100	074530.100
		Date: 081597	081597
		Delta Time (mmss.sss):	0002.000

Function Designator IDs

FDID Entry: E41P1023B1

Add: --> E41P1023B1  
Delete: <-- E41P3023B1  
E41P2023B1  
V95H3528C1  
V95H3526C1

Execute Clear Help Exit

Figure 1.3.2.2.1.5 RDP Function Designator Retrieval GUI

### 1.3.2.2.2 GRAPHIC USER INTERFACE RETRIEVED DATA DISPLAY IMAGES

Examples of retrieved data images are included in Figure 1.3.2.2.2 in Landscape format on the following page.



### 1.3.2.2.2 RDP GRAPHIC USER INTERFACE RETRIEVED DATA DISPLAY IMAGES (Continued)

```

CLCS    RAW DATA RETRIEVAL                CV75AH          FG21-0.0.0.0 PAGE73          CITIFE3
SDC RECORDED DATA REDUCTION PROGRAM                                USER ID
RECORD NUMBER 17          JULIAN DAY = 142    UTC = 1608/45.087  MSTOD2 = 1608/45.087_100

0000  A501 0000 0376 EB1F 008F 0376 EB21 4000  0001 0076 0E49 0000 0E4A 0000 0F4B 0000  000F  %...
0010  0E4C 0000 0E4D 0000 0E4E 0000 0E4F 0000  0E50 0000 0E51 0000 0E52 0000 0E53 0000  001F  .L..
0020  0E54 0000 0E55 0000 0E56 0000 0E57 0000  0E58 0000 0E59 0000 0E5A 0000 0E5B 0000  002F  .T..
0030  0E5C 0000 0E5D 0000 0E5E 0000 0E5F 0000  0E60 0000 0E61 0000 0E62 0000 0E63 0000  003F  .\..
0040  0E64 0000 FF3D EB20 0E65 0000 0E66 0000  0E67 0000 0E70 0000 0E71 0000 0E72 0000  004F  ....

```

Example of Retrieved Raw Data Packet Display

```

CLCS    C-C PACKET RETRIEVAL                SB080A          FG18-1.0.0.2 PAGE1A          FRIFG18
COMPUTER TO COMPUTER RETRIEVAL                                USER ID

  DAY      UTC      SEND  REC      TRANS ID OR  # OF
ADDR      HHMM/SS.SSS  CPU   CPU   DESCRIPTION  STACK CODE  WORDS  CDT SECONDS  ADDR  MS
324: 1955/45.048    C4  GS1A   FEP BUS COMMAND  R 5CE4          13   -00:0000/02          32
A5C2  FFF3 78D3 2E19 680B 5CE4 0001 2013 12E5 8000  AF25 0004 0000 8000          A5D1  ..
324: 1955/45.113  GS1A   C4   RESPONSE          R 631C          9   -00:0000/02          324:
10D4  FFF7 D90E 1901 0000 631C 5CE4 0000 8000 8000          10E3  ..

```

Example of Retrieved Computer to Computer Packet Display

```

CLCS    FD RETRIEVAL                SB083A          FG18-1.0.0.2 PAGE3A          F
MEASUREMENT/COMMAND RETRIEVAL                                U

  DAY:UTC      FUNCTION      SUB-      STATE, PATTERN OR
DAY:HHMM/SS.SSS DESIGNATOR CPU  TYPE  TYPE  ENGINEERING VALUE  HEX  40 CHAR DESCRIPTIVE NAME
094:1920/30.012 B58P1304C1 GPCA  AM   AB   3255.00001009370 PSIA  70ADSC12  LH PRESS HYDR FLUID SUPPLY
094:1920/30.012 V95H3523C1 GPCA  FP   SPL  0.02276502984759 DEG  0F5DA234  BODY ROLL ATT ERROR
094:1920/30.012 V95H3521C1 GPCA  FP   SPL  -0.48698810000569 DEG  3F5DBC15  BODY PITCH ATT ERROR
094:1920/30.012 V95H3522C1 GPCA  FP   SPL  0.07428649875671 DEG  0F9DABCD  BODY YAW ATT ERROR

```

Example of Retrieved Function Designator Packet Display

Note: Log Data Display to Be Defined

Figure 1.3.2.2.2 -- Example Retrieved Data Display Images(Continued)

### **1.3.2.3 RDP Input Formats**

None (Input Formats Integral to GUI Interface, Section 1.3.2.2)

### **1.3.2.4. RDP Recorded Data**

None

### **1.3.2.5. RDP Printer Formats**

The retrieved data display images shown in Section 1.3.2.2 can be output to available and supported network printers. Since the currently used print convention is 126 printer columns for 10 pitch font, a wide-carriage (15 inch) printer will be required to obtain the same form factor using monospaced Courier 12 point (10 pitch) font.

As a backup to the wide carriage printer, it may be desirable to print on any conventional standard letter (8 1/2 by 11 inch) printer. A format similar to that of the wide-carriage printout can be obtained on letter paper in 'Landscape' format using Courier 9 point (13.4 pitch) font. One hundred and thirty-two (132) characters can be printed within a ten inch "Landscape" field. Figure 1.3.2.5 provides an example of this smaller font printout.

RDP provides the option for selection of large font or small font (default) for different printers. User selection of printer and printer format is accomplished using standard network capability.

### 1.3.2.5 RDP Printer Formats (Continued)

RAW PACKET RETRIEVAL										CV75AH										FG21-0.0.0.0 PAGE73 CITEPART									
SDC RECORDED DATA REDUCTION PROGRAM																				USER ID:									
RECORD NUMBER 17										JULIAN DAY = 142										GMT = 1608/45.087									
0000	A501	0000	0376	EB1F	008F	0376	EB21	4000	0001	0076	0E49	0000	0E4A	0000	0F4B	0000	000F	%....											
0010	0E4C	0000	0E4D	0000	0E4E	0000	0E4F	0000	0E50	0000	0E51	0000	0E52	0000	0E53	0000	001F	.L...M											
0020	0E54	0000	0E55	0000	0E56	0000	0E57	0000	0E58	0000	0E59	0000	0E5A	0000	0E5B	0000	002F	.T...U											
0030	0E5C	0000	0E5D	0000	0E5E	0000	0E5F	0000	0E60	0000	0E61	0000	0E62	0000	0E63	0000	003F	.\[...]											
0040	0E64	0000	FF3D	EB20	0E65	0000	0E66	0000	0E67	0000	0E70	0000	0E71	0000	0E72	0000	004F	.....											

Example of conventional Raw Data printout on standard letter paper using Courier 9 point font (bold)

[illegible]

Scale showing monospaced Courier 9 point font

**Figure 1.3.2.5. -- Example of Printouts on Standard Letter Paper Using Courier Monospaced 9 Point Font**

### 1.3.2.6 Interprocess Communications

Interprocess communications consist of: 1) Client data request messages sent to the Server, 2) Server response messages, and 3) Server response data. This sequence is initiated when the user depresses the Execute button on the client graphic user interface. A brief discussion of these transmissions is provided below. Detailed message content is included in Appendix C.

Depression of the GUI 'Execute' button starts the process of requesting data retrieval from the SDC DRD Server. The Java Client program responds to the Execute button by opening a designated TCP/IP port on the server. The Client additionally sends the user defined 'request message' to the Server and proceeds to 'listen' for a response. A Pre-processor interface program on the DRD Server parses the Client request and initiates database retrieval. Specified data packets are then returned to the Client in a predefined length buffer. Exception events and time-out tests (communication errors) are accommodated in the software but omitted from this document for brevity.

#### 6.1 Client Request Messages to Server (Messages transmitted in ASCII format).

##### a) Raw Packet Retrieval

HEADER	RAW PACKET
Length, Retrieval(RD), TCID, RTPSSet, Start/Stop Time	Type, Source, Destination

##### b) Computer To Computer Packet Retrieval

HEADER	C-C
Length, Retrieval(CC), TCID, RTPSSet, Start/Stop Time	Source, Destination

##### d) Log Data Packet Retrieval

HEADER	LOG DATA
Length, Retrieval(LD), TCID, RTPSSet, Start/Stop Time	Source, ID

##### e) Function Designator Packet Retrieval

HEADER	FUNCTION DESIGNATOR
Length, Retrieval(FD), TCID, RTPSSet, Start/Stop Time	Num FDs, FD1, FD2, FDn

#### 6.2 Server Response Messages to Client (Messages transmitted in ASCII format).

These messages are generally informative indicating success, anomaly, or error. These messages will be displayed to the user in straightforward manner and example message formats appear in the Appendix.

### **6.3 Server Response, Retrieved Data to Client (Messages transmitted in ASCII format).**

Packet Data is retrieved from the Server in a predefined block size which can contain multiple packets. Each block contains an integral number of packets; no partial packet is transmitted. A complete transmission may consist of multiple packets within multiple blocks until the user's request is satisfied.

General format of the data block is shown below with more detailed format appearing in Appendix C.

#### **a) Message Format, Retrieved Data From Server**

RETRIEVED MESSAGE DATA BLOCK
Number of Bytes, Packet 1, Delimiter, Packet 2, Delimiter, Packet n, Delimiter

### 1.3.3 Retrieved Data Presentation (RDP) Test Plan

Figure 1.3.3 below is a diagram of the test environment;

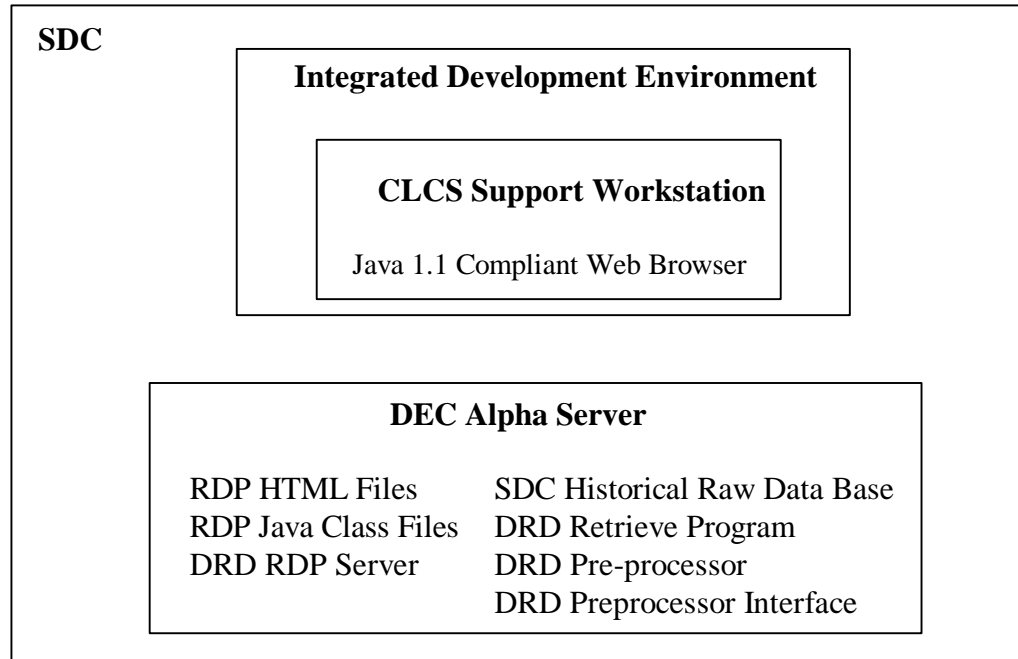


Figure 1.3.3 RDP Test Environment

#### 3.1 Hardware Configuration

The following hardware is required to test the Retrieved Data Presentation software.

- a) A CLCS Workstation on the Integrated development Environment
- b) A DEC Alpha Server
- c) Printer

#### 3.2 Software Configuration, CLCS Workstation

- a) A JDK 1.1 compliant web browser (e.g. Netscape Navigator 4.0 with JDK 1.1 patch)

#### 3.2 Software Configuration , DEC Alpha server

- a) RDP HTML Files
- b) RDP Java Class Files
- c) DRD Application Software

### **3.3 Data Base**

- a) DRD Historical Raw Database with Computer to Computer, Function Designator, and Log Data directories

### **3.4 Personnel**

The following personnel are needed to perform the test:

- a) Quality
- b) CSCI lead
- c) Developer

### **3.5 Test Plan Objectives**

The ultimate objective of the test plan is to verify that the RDP meets the requirements set forth in the DP2 document. To accomplish this objective a test sequence as outlined below will be performed.

1. Control functions of the Main Menu. Depress each push-button control and verify their results.
2. Display window messages of the Main Menu. Invoke a series of test sequences that result in message display for each sequence. Verify the results.
3. Retrieval windows, push-button controls. Verify proper functionality of each push-button of each of the four retrieval windows.
4. Retrieval window base parameters panel. Enter varied parameters in each of the following entry fields and test for: a) reasonability test on validity of the entry, b) acknowledge the Server received valid data entries for each parameter, c) test for sever response for data within range and for data out of range. These base parameters are listed below:
  - 4.1 TCID
  - 4.2 RTPSSet
  - 4.3 Start Time and Date
  - 4.4 Stop Time and Data
5. Perform tests similar to those of item 4), above, for each of the following retrieval window parameters:
  - 5.1 Raw Packet Retrieval
  - 5.2 Computer to Computer Retrieval
  - 5.3 Log data Retrieval
  - 5.4 Function Designator retrieval

## Appendix A

	CDS CCMS Historical	SDC CCMS Historical	SDC CLCS Historical	SDS CCMS Real-time	SDS' CCMS et al Real- time	SCAN Server CCMS Real-time	SDS CLCS Real-time
RCWI	✓	✓					
ADAT		✓	✓				
RDP			✓				
PAT		✓		✓			
JView		✓		✓	✓	✓	
ANNT		✓		✓			
RCWI - Robust CAP Web Interface ADAT - Advanced Data Analysis Tool RDP - Retrieved Data Presentation PAT - Propulsion Advisory Tool JView - JView (Java Version of PCGOAL) ANNT - APU Neural Net Tool							

**Table 2 — Data Analysis and Presentation Data Sources (Support for Thor)**



# Appendix B

## Definitions

Historical Data -- Data that has been recorded in the SDC Raw Recorded FD Data Base. This data is available in near real-time (i.e. within seconds of occurrence).

Real- Time -- Data that is available from the real-time shuttle data stream.

Raw Packet -- Payload header and body – does not include Reliable Messaging Data.

# Appendix C

## Definitions

### 1) Client Request Messages to Server (Messages transmitted in ASCII format).

#### a) HEADER MESSAGE (similar for all messages)

Maximum Number of Bytes Per Field					
3	2	7	8	15	15
Length	Retv	TCID	RTPSSet	StartTime	StopTime

EXAMPLE:

**168#RD#sa086A1#TESTDATA#110797#097: 1425/28.100#097:1425/29.153#**

HashMark (#)-- Used as a delimiter between each field.

Length -- The full length of this request message in bytes, including header, body, 'hash-mark' delimiters and length field.

Retv -- Retrieval Requested by User:  
RD = Raw Data, CC = C to C, LD =Log Data, FD = FDID.

TCID -- Test Configuration ID; up to seven characters.

RTPSSet -- The physical facility of the test; Usually three or four characters but can be up to eight.

StartTime -- Retrieval Start, Format: ddd:hhmm/ss.sss. Leading zeros always.

StopTime -- Retrieval Stop, Format: ddd:hhmm/ss.sss. Leading zeros always.

NOTE: The asterisk character (\*) in any appropriate field signifies "All".

#### b) RAW PACKET RETRIEVAL

Maximum Number of Bytes Per Field			
(as above)	2	3	3
HEADER +	Type	Source	Destination

EXAMPLE:

**41#4#164#**

Type -- Packet Type; two byte hex value (per Packet Payload ICD.)

Source -- Source computer ID; Three byte number representing ID.

Destination -- Computer ID; Applies only to C-C type messages.

NOTES: 1. Asterisk in appropriate field signifies "All".

2. Three digit computer ID number in Packet ICD, Table 23.

### c) COMPUTER TO COMPUTER PACKET RETRIEVAL

Maximum Number of Bytes Per Field		
(as above) <b>HEADER +</b>	3 <b>Source</b>	3 <b>Destination</b>

EXAMPLE:

**31#\*#**

Source -- Source computer ID; Three byte number representing ID.

Destination -- Destination Computer ID

- NOTES: 1. Asterisk in Source or Destination field signifies "All".  
2. Computer ID number defined in Packet ICD, Table 23.  
3. Each Source message requires retrieval of a corresponding acknowledge and reply messages from Destination computer.

### d) LOG DATA PACKET RETRIEVAL

Maximum Number of Bytes Per Field		
(as above) <b>HEADER +</b>	3 <b>Source</b>	2 <b>ID</b>

EXAMPLE:

**31#TC#**

Source -- Source computer ID; Three byte number.

ID -- ID of a specific Log Data Message

- NOTES: 1. Asterisk in Source or ID field signifies "All".  
2. Computer ID number defined in Packet ICD, Table 23.  
3. Log Data ID appears in Packet ICD, Section 4.1.

### f) FUNCTION DESIGNATOR PACKET RETRIEVAL

Maximum Number of Bytes Per Field				
(as above) <b>HEADER +</b>	3 <b>NumFDs</b>	10 <b>FDID1</b>	10 <b>FDID2</b>	10 <b>FDID3</b>

EXAMPLE:

**3#V41P1130C1#E41T3628B1#V93Q0021CX#**

NumFDs -- Number of FDIDs in this transmission.

FDID1 -- First FDID of represented three.

FDID2 -- Second FDID of represented three.

FDID3 -- Third FDID of represented three.

2) **Server Response Messages to Client (Messages transmitted in ASCII format).**

The server returns either the requested retrieved data or a response message for data not found. Examples of typical response messages appear below.

a) **Message From Server:**

NODATA

**Message Display to User:**

No data found for FDID within requested time frame.

b) **Message From Server:**

ENDARCHIVE\_DATAFOUND

**Message Display to User:**

End of archive reached before request satisfied.

c) **Message From Server:**

ENDARCHIVE\_NODATA

**Message Display to User:**

End of archive reached, no data found.

d) **Message From Server:**

READ\_ERROR

**Message Display to User:**

Error reading server request from socket.

e) **Message From Server:**

(Complete Message Set to be defined in development phase)

3) **Server Response, Retrieved Data to Client (Messages transmitted in ASCII format).**

Message format of the data retrieved from the server (server response) appears below. The expected content of these data messages are shown in Section 1.3.2.2, RDP User Display Formats.

a) **Message Format, Retrieved Data From Server**

Maximum Number of Bytes Per Field					
4	variable	4	variable	4	
NoBytes	PktData	Delim	PktData	Delim	(repeat till end Data)

EXAMPLE (space between bytes for clarity only, does not exist):

0056 0123 4567 89AB CDEF 0123 ##### 9999 FFFF AAAA EEEE BBBB CCCC #####

NoBytes -- Number of bytes of data in this transmission. Include NoBytes and Delimiters.

PktData -- Packet data. Raw Data is represented as one hexadecimal character per byte of transmission (0 through F only). ASCII data fields in a packet (if any) are transmitted intact. Four successive Hash-marks may not be transmitted.

Delim -- Four successive hash-marks constitute a delimiter between each Packet Data. The Packet-data and Hash-mark sequence repeats until all data is transmitted.